CELL REPRODUCTION:
Zen and the Art of Cell Cycle Maintenance
MCD Biology Graduate Student Symposium
March 15-17th, 1991

Keynote address: David Prescott (University of Colorado)
A historical account of cell reproduction study

Cues that initiate a cell to enter G1 and the concept of start

Geoffrey M. Cooper (Dana Farber Cancer Institute)
The signal transduction pathway and cell cycle regulation

Charles D. Stiles (Dana Farber Cancer Institute)
Growth factor inducible genes

Steven I. Reed (Scripps Clinic)
Cell cycle regulation at the G1/S transition

The events of S phase and the transition to mitosis

Thomas J. Kelley (Johns Hopkins University)
Eukaryotic DNA replication: insights from an SV40 model system

Robert T. Schimke (Stanford University)
Gene amplification in cultured cells

Mary Dasso (University of California)
A link between DNA synthesis and mitosis

Paul Nurse (University of Oxford)
Cell cycle control in fission yeast

The G2/M checkpoint and the events of M phase

James Maller (University of Colorado)
The role of MPF in cell cycle regulation

Cooly L. Rieder (Wadsworth Center)
A microscopic analysis of early mitotic events

W. Zacheus Cande (University of California)
Anaphase: events, signals and regulation

Graham Warren (Imperial Cancer Research Fund)
Membranes and mitosis

Exiting the cell cycle

Beverly Errede (University of North Carolina)
Regulation of the yeast cell cycle by mating factors

Jonathan M. Horowitz (Duke Univ. Medical School)
Tumor suppressor genes and negative regulation of the cell cycle

Ira Black (Robert Wood Johnson Medical School)
Regulation of mitosis during neurogenesis

Helen Blau (Stanford University)
The pathway of differentiation in muscle cells

Open Discussion: Led by Geoffrey Cooper and Steven Reed
Can we begin to connect the arena of growth factors and negative regulators of cell reproduction with the molecular genetic information on control of the nuclear cycle?

Evolution from the Inside:
The Influence of Cellular and Developmental Processes on Evolution

The 1992 MCDB Graduate Student Symposium
April 24 - 26, 1992, Boulder, Colorado.

Keynote Address:

Stephen Jay Gould, Harvard University. Dr. Gould will speak on the growing awareness that there are forces influencing evolution that depend on properties of the organism itself.

Session I: Biological Organization and Molecular Evolution

Patricia Foster, Boston University School of Medicine. Dr. Foster will talk about the observation that some mutations ("directed mutations") occur more frequently when they are adaptive and about candidate models for how these mutations could, in fact, be directed.

Christopher Cullis, Case Western Reserve University. Dr. Cullis will discuss environmental induction of a specific set of heritable DNA alterations in Flax.

Frank Gonzalez, National Institutes of Health. Dr. Gonzalez will discuss molecular drive, a process by which multi-gene families evolve in a manner operationally distinct from natural selection or genetic drift, using the P450 gene family as a model.

Antony Dean, Chicago Medical School. Dr. Dean's work provides an experimental approach for investigating the capacity of natural selection to discriminate between allelic variants and has implications for how metabolic pathways actually evolve.

Stuart Kauffman, School of Medicine, University of Pennsylvania/ Santa Fe Institute. Dr. Kauffman will talk about the influence of properties of genetic networks on the evolution of development.

Session II: Developmental Influences on Evolution

Phillip Saunders, Kings College, UK. Dr. Sauders will discuss the epigenetic landscape and and its influence on evolution.

Stuart Newman, New York Medical College. Dr. Newman will discuss the influence of "generic" physical properties of organisms on the evolution of development.

Mae-wan Ho, Open University, UK. Dr. Ho will discuss lessons from mimicry and phenocopies for development, evolution and rational taxonomy.

Pere Alberch, Museo Nacional de Ciencias Naturales, Spain. Dr. Alberch will discuss heterochrony and developmental constraint in the vertebrate limb.

Jeff Hill, Idaho State University. Dr. Hill will discuss heterochrony and the evolution of floral form.

Rudolf Raff, Indiana University. Dr. Raff will discuss heterochrony in sea urchins as example of evolutionary opportunities afforded by the regulatory hierarchy of developmental processes.